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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/658,393	09/08/2000	Kathrin Berkner	074451.P110	3421

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EXAMINER	
LEE, TOMMY D	

ART UNIT	PAPER NUMBER
2624	

DATE MAILED: 03/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/658,393	BERKNER ET AL.	
	Examiner	Art Unit	
	Thomas D. Lee	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 November 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9,38-47,84-86,119 and 120* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9,38-47,84-86,119 and 120* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *20010514*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This Office action is responsive to applicant's amendment filed November 4, 2004. The cancellation of claims 10-37, 48-83 and 87-118 is acknowledged. Claims 1-9, 38-47, 84-86, 119 and 120 are pending.

Specification

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 38-40 and 120 are rejected under 35 U.S.C. 102(b) as being anticipated by International Publication WO 99/28865 (Decegama).

Regarding claims 1, 2, 38 and 120, Decegama discloses a system comprising: a wavelet-based image processing path to enhance an input image in a wavelet domain, comprising a forward wavelet transform (multistage wavelet transform filter 50 (page 6, lines 7-23)), one or more wavelet-based processing blocks (enhancement system 10

(page 7, lines 18-22)), and an inverse wavelet transform (multistage inverse wavelet transform filter 22 (page 9, line 27 – page 10, line 20)); and a print engine coupled to the processing path (output device 62 may be a printer (page 5, lines 23-27)). The system further comprises an input operable to receive the input image from an external source and a scanner for generating the input image, wherein the input and the scanner are coupled to the image processing path (signal source 68 may be a scanner; input device may be a keyboard 64)).

Regarding claims 39 and 40, Decegama discloses a method comprising: processing an input image by enhancing the input image, including applying a forward wavelet transform to create a plurality of coefficients and filtering coefficients with a coefficient domain operator in a wavelet domain (multistage wavelet transform filter 50 (page 6, lines 7-23)); and outputting a processed image (output device 62). The method further comprises: applying one or more wavelet-based processing blocks to coefficients resulting from applying the forward wavelet transform (enhancement system 10 (page 7, lines 18-22)); and applying an inverse wavelet transform (multistage inverse wavelet transform filter 22 (page 9, line 27 – page 10, line 20)).

4. Claims 39, 40 and 84-86 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,497,777 (Abdel-Malek et al.).

Regarding claims 39 and 40, Abdel-Malek et al. disclose a method comprising: processing an input image by enhancing the input image, including applying a forward wavelet transform to create a plurality of coefficients and filtering coefficients with a coefficient domain operator in a wavelet domain (wavelet transform processor 36

(column 4, lines 21-44)); and outputting a processed image (display system 18 outputs processed image (column 6, lines 42-49)). The method further comprises: applying one or more wavelet-based processing blocks to coefficients resulting from applying the forward wavelet transform (threshold processor 38 processes wavelet transform signal (Fig. 2) to remove noise (column 5, line 42 – column 6, line 10)); and applying an inverse wavelet transform (inverse wavelet transform processor 42 (column 6, lines 10-18)).

Regarding claims 84-86, Abdel-Malek et al. disclose a method comprising: applying a forward wavelet transform to image data (wavelet transform processor 36 (column 4, lines 21-44)); performing denoising by thresholding coefficients generated by applying the forward wavelet transform (threshold processor 38 (column 5, line 42 – column 6, line 10)); rescaling coefficients by filtering coefficients after thresholding (part of inverse wavelet process (column 6, lines 20-42). The method further comprises sampling the wavelet coefficients (wavelet coefficients are inherently sampled in threshold process); and applying an inverse wavelet transform on filtered coefficients (inverse wavelet transform processor 42 (column 6, lines 10-18)).

5. Claim 119 is rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,905,579 (Katayama et al.).

Katayama et al. disclose a copier having a wavelet-based image processing path for enhancing image data (wavelet transforming circuit 2, edge detecting circuit 3, character detecting circuit 4 (column 3, lines 29-47); for use in a copier (column 1, lines 11-18)).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 3 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Decegama in view of U.S. Patent 5,412,741 (Shapiro).

Decegama does not explicitly disclose a critically sampled wavelet transform. This type of wavelet transform is well known in the art, as noted by Shapiro (column 1, lines 34-38). Applicant has not disclosed that the use of a critically sampled wavelet transform provides an advantage, is used for a particular purpose or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected applicant's invention to perform equally well using any one of a number of well-known wavelet transform processes depending on the image data to be reduce, including the critically

sampled wavelet transform, because all wavelet transforms effectively reduce the amount of image data for storage or transmission. Therefore, it would have been obvious for one of ordinary skill in the art to apply a critically sampled wavelet transform to the teaching of Decegama.

9. Claims 4, 5, 42 and 43 rejected under 35 U.S.C. 103(a) as being unpatentable over Decegama in view of U.S. Patent 6,236,745 (Chen et al.).

Decegama does not explicitly disclose an overcomplete or Haar wavelet transform. This type of wavelet transform is well known in the art, as noted by Chen et al. (column 3, lines 48-58). Applicant has not disclosed that the use of an overcomplete or Haar wavelet transform provides an advantage, is used for a particular purpose or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected applicant's invention to perform equally well using any one of a number of well-known wavelet transform processes depending on the image data to be reduced, including the overcomplete or Haar transform, because all wavelet transforms effectively reduce the amount of image data for storage or transmission. Therefore, it would have been obvious for one of ordinary skill in the art to apply an overcomplete or Haar wavelet transform to the teaching of Decegama.

10. Claims 6, 7, 44 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Decegama in view of U.S. Patent 6,148,111 (Creusere).

Decegama does not explicitly disclose a 5,3 or 2,6 wavelet transform. This type of wavelet transform is well known in the art, as noted by Creusere (column 5, line 64 – column 6, line 1). Applicant has not disclosed that the use of a 5,3 or 2,6 wavelet

transform provides an advantage, is used for a particular purpose or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected applicant's invention to perform equally well using any one of a number of well-known wavelet transform processes depending on the image data to be reduced, including the 5,3 or 2,6 wavelet transform, because all wavelet transforms effectively reduce the amount of image data for storage or transmission. Therefore, it would have been obvious for one of ordinary skill in the art to apply a 5,3 or 2,6 wavelet transform to the teaching of Decegama.

11. Claims 8 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Decegama in view of U.S. Patent 6,847,737 (Kouri et al.).

Decegama does not explicitly disclose a complex wavelet transform. This type of wavelet transform is well known in the art, as noted by Kouri et al. (column 32, lines 65-67). Applicant has not disclosed that the use of a complex wavelet transform provides an advantage, is used for a particular purpose or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected applicant's invention to perform equally well using any one of a number of well-known wavelet transform processes depending on the image data to be reduced, including the complex wavelet transform, because all wavelet transforms effectively reduce the amount of image data for storage or transmission. Therefore, it would have been obvious for one of ordinary skill in the art to apply a complex wavelet transform to the teaching of Decegama.

12. Claims 9 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Decegama in view of U.S. Patent 6,141,452 (Muran).

Decegama does not explicitly disclose a limited redundancy wavelet transform. This type of wavelet transform is well known in the art, as noted by Muran (column 3, lines 49-56). Applicant has not disclosed that the use of a limited redundancy wavelet transform provides an advantage, is used for a particular purpose or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected applicant's invention to perform equally well using any one of a number of well-known wavelet transform processes depending on the image data to be reduced, including the limited redundancy wavelet transform, because all wavelet transforms effectively reduce the amount of image data for storage or transmission. Therefore, it would have been obvious for one of ordinary skill in the art to apply a limited redundancy wavelet transform to the teaching of Decegama.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas D. Lee whose telephone number is (703) 305-4870. The examiner can normally be reached on Monday-Friday (7:30-5:00), alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on (703) 308-7452. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thomas D. Lee
Primary Examiner
Art Unit 2624

tdl
March 3, 2005